TESTIMONY OF
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BEFORE THE

SUBCOMMITTEE ON COMMUNICATIONS
OF THE
U.S. SENATE COMMITTEE
ON COMMERCE, SCIENCE, AND TRANSPORTATION

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Mr. Chairman and Members of the Subcommittee:

Thank you for the opportunity to appear before you today to discuss how the wireless industry's ubiquitous and robust telecommunications networks enhance public safety, assist emergency personnel, and permit crucial contact among families and friends on both a daily basis and in times of crisis. I am Gloria Harris, Vice President, Field Operations – Tristate Area, of AT&T Wireless Services, Inc. ("AWS"). Today, my testimony will focus on how AWS responded to the events of September 11, 2001, including how we used our existing procedures and outstanding personnel to avert a potential network disaster. Even as cell sites across New York City failed due to a wireline switch outage, and thousands upon thousands of callers turned on their wireless phones at the same time, I am proud to say that our network remained solid. I will also tell you about the steps AWS is taking in the aftermath of 9-11 to enhance our emergency response procedures and to make our wireless network as strong as it can possibly be.

I. HOW WE RESPONDED.

Impact on the Wireless Network. At 8:45 a.m. on September 11, 2001, American Airlines Flight 11 crashed into the North Tower of New York's World Trade Center complex. This unspeakable terrorist act was just the beginning of what would soon become this century's most horrific national tragedy. It also put an enormous strain on our nation's telecommunications networks, including AWS's wireless systems, which were crucial not only to the rescue, recovery, and law enforcement efforts that were immediately launched, but to the ability of American citizens to reach loved ones in a time of crisis.

Between 9:00 and 10:30 a.m. on September 11, additional planes were piloted into the South Tower of the World Trade Center and the Pentagon, another plane crashed in Shanksville, Pennsylvania, and both World Trade Center towers collapsed. By mid-afternoon, there were power outages throughout lower Manhattan and six AWS cell sites were out of service.

To complicate matters, thousands and thousands of AWS subscribers in New York and Washington, who, under normal circumstances, would not be using their wireless service at all, simultaneously picked up their phones and began to dial – some to contact loved ones, some to call for help, and some to say goodbye. In addition, AWS handed out wireless handsets to emergency workers at Ground Zero in lower Manhattan, all of whom started placing calls immediately to coordinate rescue and recovery efforts. Traffic on our network in Manhattan increased by as much as 150 percent from the same day the previous week, and in certain areas of the city there were 360 percent more attempts to make calls than AWS usually experienced. Our systems in Washington, D.C. and Pittsburgh were being used up to and beyond capacity as well.

Around 4:00 p.m., the burden to AWS's network increased dramatically as a result of the

complete destruction of Verizon's major switching office, which was directly across the street from the World Trade Center. Not only did that Verizon switch serve 45 AWS cell sites – most of which were in lower Manhattan – the landline customers in the affected areas had nowhere to turn for service but to their wireless carriers. Verizon obviously was intent on restoring service for its own customers and consequently was unable to reroute AWS's traffic from the impaired cell sites. By the evening of September 11, 47 AWS cell sites were out of service, one cell site had been completely destroyed, all of lower Manhattan had sustained a complete commercial power failure, and wireless call volumes remained extremely high in light of the failure of the wireline network.

What We Did. Notwithstanding the incredible strain of increased call volumes and impaired cell sites, AWS's wireless network in New York and everywhere else remained strong. This is due in large part to our ability to draw upon the lessons learned and the procedures developed from many years of responding to hurricanes, tornados, and floods, as well as planned day-long disaster simulations. Specifically, in every market in the United States in which it provides service, AWS has a disaster field office. When not needed, these offices serve as conference rooms or storage areas, but they are equipped with redundant telephone lines, back-up power sources, food and medical supplies, and manuals outlining the steps to be taken in disaster situations. Each of our disaster field offices reports to one of our eight regional Emergency Operations Centers, whose activities are coordinated by AWS's National Emergency Operations Center in Bothell, Washington. Clearly, no established procedures could have prepared us for the events of September 11, but they did enable AWS to avert a potentially catastrophic network failure.

Just minutes after the North Tower was hit, AWS activated its highest level of disaster

response. AWS's National Emergency Operations Center coordinated efforts at the national, regional, and local levels by identifying all available personnel and equipment to support recovery and repair activities in New York and Washington, D.C. We also set up a regional staging ground in Paramus, New Jersey, and used that location for the delivery of portable generators, network equipment, and "Cells on Wheels" – or "COWs" – from across the country. Many of our Manhattan employees were asked to report to a central disaster field office, where they were accounted for and where they began preparing for cell site recovery.

In addition, on September 11, AWS established a 96-port conference bridge to manage technical resources among our national and regional operational centers and the affected disaster field offices. That bridge, however, which remained open day and night for weeks after September 11, was not used solely by AWS personnel. Rather, police, fire, and other emergency responders regularly dialed in to the bridge in order to distribute and obtain information about rescue and recovery activities. Similarly, public safety dispatchers used the conference facilities to request AWS's assistance in tracking callers to 911. As it turned out, AWS's conference bridge was an essential mechanism for communication among dozens of different agencies, as well as a way for AWS to coordinate its own internal recovery efforts.

AWS's primary activity on September 11 and the following days was to assess the extent of the impairment to our service in New York and Washington, D.C. and to prioritize service restoration efforts. Since we could not rely on Verizon to install new facilities for us or to reroute traffic from its destroyed lower Manhattan switch, we had to figure out alternate ways to provide service in the areas around the impaired cell sites. Initially, this was accomplished by the mobilization of COWs or by

adding additional equipment and capacity to nearby cell sites.

Bringing equipment into Manhattan on September 11 and the ensuing days, was a significant challenge because all bridges into the city were closed and all flights had been grounded. Accordingly, we worked with the New York City Office of Emergency Management and the Mayor's office to obtain permits or waivers to carry our equipment over the closed infrastructure and to secure escorts for the trucks.

We also faced serious obstacles in getting the COWs permitted and parked in locations that had a line-of-site to our network. While New York authorities were quite cooperative, certain other nearby localities wanted us to go through full fledged zoning proceedings, which normally could take weeks or even months, before we could site and activate these temporary facilities. AWS personnel, however, worked around the clock to obtain approvals from local authorities, establish microwave links, and test the temporary facilities. Within 21 hours after deployment, AWS activated its first COW in Liberty State Park in Jersey City, New Jersey. Shortly thereafter, a second COW was sent to Brooklyn to further support Manhattan's network capacity. And, at the Pentagon's request, we deployed a third COW to the Pentagon. Ultimately, AWS activated a total of 17 COWs: 15 in New York, one in Washington, D.C., and one in Pennsylvania. In addition, AWS deployed 12 portable generators to support the cell sites without commercial power.

Over the next several days, AWS brought 26 technicians from other AWS markets across the country to assist in New York, where the network was the most impacted. The technicians worked to integrate COWs into the permanent infrastructure, repaired AWS's damaged equipment, implemented a solution to permit law enforcement wiretapping, and recovered court-ordered surveillance systems used

by law enforcement agencies. In addition, at the request of the New York Police Department, network engineers initiated, coordinated, and implemented the addition of over 6,000 emergency voice mail message hours in Queens, Manhattan, and Rochelle Park, thereby increasing the number of voice mail messages allowed in subscribers' mailboxes.

Perhaps the biggest obstacle to our recovery activities was in our attempts to obtain – and retain – access to Ground Zero for our employees, contractors, and vendor employees. This seemed to be primarily an issue of too little coordination among dozens of state and local agencies. While the police department might let us bring our equipment into the area in the morning, a few hours later, the fire marshal would deny access to that same equipment or require another burdensome round of paperwork. Verizon and Con Edison apparently did not encounter these difficulties because they were considered utilities, while AWS was not.

On September 11, the most immediate danger to our network was the enormous increase in calls being placed by our customers and emergency workers. During the peak of the crisis, we instituted load shedding procedures by deactivating non-essential features on a number of switches, such as Caller ID, performance measurement capability, and fraud detection, to avoid a complete crash of our New York system. The result was similar to that achieved by shutting windows on a personal computer – it helped provide more capacity for traffic routing. While there nevertheless were periods during the day in which accessing our network required multiple attempts, the system remained solid.

It quickly became clear to AWS, however, that it required additional spectrum to support recovery operations and the increased call burden. Accordingly, on September 12, AWS, with the cooperation of NextWave Communications, obtained a special temporary authorization from the

Federal Communications Commission, which allowed it to access 10 MHz of unused spectrum licensed to NextWave in the New York market. By September 27, through the addition of these channels, as well as the deployment of COWs and other temporary equipment, and the expedited construction of new sites, AWS had added enough capacity in Manhattan to permit almost 5,000 additional simultaneous calls. It also added 630 new voice paths in Washington, D.C. by September 14, and 158 voice paths in Pennsylvania by September 12. These new channels provided the necessary capacity to compensate for the site losses at Ground Zero and to accommodate the additional call volume around the White House, the Pentagon, and the crash site in Shanksville, Pennsylvania.

At the same time as it was activating COWs and adding equipment at adjacent cell sites in the affected areas, AWS was performing surveys of all 47 lost cell sites to determine how service could best be restored on a permanent basis. By September 28, AWS had restored all but three of the recoverable cell sites using microwave facilities or AWS's own backhaul facilities, as well as working with Verizon to reroute traffic.

AWS's rescue efforts. While AWS's primary focus during the days surrounding September 11 was on averting a network disaster and continuing to maintain much needed wireless service to public safety and commercial users, it also supported the ongoing search and recovery efforts at Ground Zero and the Pentagon in other ways. Immediately after September 11, for example, AWS activated, registered, and handed out more than 5,000 wireless phones to approximately 50 organizations, including the Red Cross, the Federal Emergency Management Agency ("FEMA"), the Department of Transportation, and the City of New York. With these phones, AWS donated over 1.3 million minutes of airtime usage. In addition, AWS waived all airtime charges for calls made and received on

September 11 by east coast customers between Massachusetts and Virginia. AWS employees also worked around the clock at phone distribution and recharging centers located near the disaster areas. Similarly, AWS coordinated the delivery of safety kits, radios, goggles, breathing filters, gloves and radio equipment to the impacted areas to sustain its own efforts and to support local emergency response teams in their recovery efforts.

To aid in the various search and rescue efforts, AWS joined the Wireless Emergency Response Team ("WERT"), a coalition of wireless and wireline telecommunications carriers and infrastructure and equipment providers. AWS allocated channels for the WERT activities and donated spectrum analyzers to support recovery missions. Both in conjunction with WERT and on its own initiative, AWS also established three-person teams of AWS technicians to assist emergency response personnel in searching for possible survivors in the World Trade Center rubble. Each team, equipped with a spectrum analyzer, a directional antenna, and a portable generator, was sent out to search for signals emanating from cell phones at Ground Zero. Tragically, these teams found no survivors – only phones that had been left on by WTC workers.

In addition, AWS assisted FEMA in its efforts to locate those lost in the World Trade Center and the Pentagon by providing them with customer information that detailed which customers had placed calls from inside the Towers, the Pentagon, and nearby buildings. We identified all the calls placed to 911 from those locations and proceeded to call back each calling party to determine if they needed further assistance. While no survivors were located in either location, AWS contacted many people who were thought to be missing and helped bring closure to family members who lost their loved ones on September 11.

AWS also supported law enforcement personnel and kept rescue teams from danger by discrediting false reports. In addition, AWS provided U.S. Marshals with network information and frequencies for the equipment used to help locate cellular calls. In conjunction with these efforts, AWS provided guidance to 911call centers by giving recommendations for trapped survivors' cell phone usage to conserve battery power and maintain the best possible signal.

II. WHERE DO WE GO FROM HERE?

As the foregoing shows, given its existing procedures, training, and outstanding personnel, AWS was in a very good position to respond to the 9-11 crisis from a network operations standpoint. Despite the loss of 47 cell sites, largely due to the destruction of Verizon's wireline switch at Ground Zero and an incredible increase in calls on September 11 and the following days, AWS kept its network up and running, obtained additional spectrum, added temporary cell sites, and addressed urgent requests for service, equipment, and facilities from displaced residential and business customers, as well emergency response agencies and utility workers.

9-11 also taught AWS, however, that there are many ways in which it could improve its emergency procedures and be better prepared for disasters of any sort that impact the nation's vital telecommunications infrastructure. Therefore, as soon as the initial crisis had subsided in the days following September 11, AWS personnel from all areas of the company got together to brainstorm about what had gone wrong, what had gone right, and what it should do from that day forward to make use of the lessons learned from 9-11.

AWS Crisis Management Team. Although, as described above, AWS had in place on September 11 a multi-level disaster response team that was able to deploy quickly and respond

efficiently to dozens of network outages and other problems, we came to the conclusion that our existing procedures were focused too heavily on just the operational part of our business. For that reason, we have now created a Crisis Management Team that operates at the highest levels and covers all functions of the company. This team has representatives in every AWS market, company vice presidents at the regional level, and AWS's Chief Operating Officer at the head. Personnel from customer service; environmental, health and safety; financial; human resources; legal; marketing; real estate; insurance, as well as network operations and every other corporate unit of AWS participate in this group and bring their particular expertise and interests to the table. Already, we have established business recovery plans for each critical unit of the company. We believe that our Crisis Management Team will help ensure that AWS can respond effectively to a disaster on a nationwide and *business-wide* level.

Priority Access. One thing 9-11 made abundantly clear is that wireless phones are crucial to the nation's ability to communicate during a disaster. Wireless service allowed people trapped in buildings to call for help and, in some cases, to call their loved ones for the last time, allowed passengers on a plane likely bound for the White House – or the building we are in right now – to obtain information in time to avert an even larger disaster, and allowed residents of New York, Washington, D.C., and across the nation to let their sons, daughters, husbands, and wives know they were safe. Wireless phones also were essential for firefighters, police, and other emergency response personnel in those cities to coordinate their rescue efforts, and for utility workers to coordinate their repair and salvage efforts.

In light of the limited capacity of any telecommunications system, it is necessary for carriers to balance competing demands for network time. Emergency agencies' need to communicate during a

crisis obviously is crucial, but, as we discovered on September 11, the ability of AWS's existing customers – workers, parents, airline passengers – to speak to each other and to call for help was no less important. Accordingly, since September 11, AWS has been working to come up with a practical solution to ensuring that those with the greatest need are able to place and receive calls. To this end, AWS, together with other members of the wireless community and the National Communications System have been working cooperatively to develop a plan that will give access to the next available wireless voice channel to certain National Security/Emergency Preparedness personnel in times of severe network congestion, while at the same time reserving capacity for customers.

Obviously, no network can be built to a capacity to accommodate all customers and emergency agencies during disasters of the magnitude experienced on September 11. However, we want to ensure that the facilities we do have are used in the most efficient and effective manner possible. We think that the wireless Priority Access Plan currently being discussed goes a long way toward accomplishing that goal.

Need for Government Assistance. AWS is taking all the steps it can in preparing the company to respond to disasters – both natural and manmade – that affect the ability of U.S. citizens to communicate. We believe that the procedures we are establishing today will make us better able to coordinate across all functions of the company in order to patch holes blown in our network as well as respond to customer and government problems quickly. There are a number of issues beyond our control, however, that, if not addressed, have the potential to make these efforts significantly less effective. Accordingly, we are asking Congress and federal agencies to help ensure that wireless carriers are able to obtain access to disaster sites, have sufficient spectrum to meet future consumer

demands, and that they can site towers efficiently, all of which are necessary to create the robust networks required to withstand, and recover rapidly from, any type of disaster.

First, as indicated earlier, one of the most significant problems we faced in attempting to restore service to customers and emergency workers after September 11 was coordinating with dozens of federal, state, and local agencies and offices to bring necessary equipment to the affected areas, to obtain permits to site those temporary facilities, and to ensure that our employees had continual access to the equipment once it was in place. One suggestion we have to ensure smoother sailing in the future would be to empower FEMA or another federal agency to oversee issues involving the access of essential companies, such as telecommunications providers like AWS, to disaster areas. Should we ever face similar circumstances (and we pray we do not), that agency could distribute "universal" badges, which the companies could then hand out to their employees as necessary.

Second, the primary constraint on the development of a comprehensive wireless market is the lack of adequate spectrum. AWS is in the enviable position of having enough spectrum to provide the services our customers demand for the first part of this decade. As we begin to roll out advanced technologies on a wider scale, however, we will require additional bandwidth to provide the types of services our subscribers tell us they want and at the same time be able to assist public safety agencies with their needs. The government's primary role in the development of voice and broadband wireless networks – one which only it can fulfill – is to ensure that spectrum that meets the technical and practical needs of carriers is available. Additional bandwidth is absolutely essential if the wireless industry is to be able to meet future consumer needs, much less respond to such needs during times of disasters.

Much of the globally harmonized spectrum that AWS and other wireless carriers need is

woefully underutilized by existing licensees in those bands today. Unfortunately, however, the process for reallocating such spectrum is moving slowly and unevenly. The Federal Communications Commission has declined to make certain fixed wireless bands available to existing mobile operators and, despite the failure of the mobile satellite service ("MSS") industry to use even a fraction of the spectrum currently allocated to it, it continues to ask the agency to license more MSS operators. It also remains unclear if or when additional spectrum used by the Department of Defense and other federal agencies could be freed up for commercial use.

In this time of bandwidth scarcity, it is unreasonable to let spectrum lie fallow. There are dozens of wireless carriers today that would willingly spend billions of dollars for the spectrum held – but barely used – by some current satellite and broadcast licensees and government agencies, and would construct the networks and serve customers immediately. If 9-11 shows anything, it is that the wireless infrastructure is no longer a luxury service or merely a backup network to the facilities other carriers have in the ground and strung on poles. Rather, it is a vital, robust, and primary means of communication everyday, and especially in times of crisis. Accordingly, AWS respectfully requests that Congress to do everything within its power to ensure that spectrum is distributed in a manner that permits the wireless industry to grow and to create the strong networks the country needs.

Finally, while insufficient spectrum remains one of the greatest barriers to wireless deployment, the inability of wireless carriers to site the towers and other facilities they need to provide such service without unreasonable delay or expense also remains a huge obstacle. Although Congress has directed federal agencies to make federal property available for wireless telecommunications siting, the agencies often delay approval of applications for unreasonable periods of time or attempt to collect excessive

fees for the use of federal lands. Similarly, localities regularly ignore Congress's admonition that they not use their zoning authority to prohibit the provision of wireless service. It can sometimes take years to site a tower and the costs of zoning hearings and litigation are often enormous. These delays and expenses not only affect the quality of service for consumers today, they reduce AWS's ability to deploy the redundant facilities needed to respond to the loss of cell sites in disasters.

Although Congress has made it clear to federal, state, and local agencies that they should not stand in the way of wireless deployment, apparently the message needs to be stronger. Accordingly, AWS urges Congress to set explicit guidelines for the amount of time an agency can take to respond to a siting request and for holding hearings on that request. In addition, we ask Congress to ensure that the fees the agency charges for use of the government property are truly just and reasonable.

Misleading public safety "solutions." Since September 11, a number of parties have come forward with alleged "solutions" to the problems faced by emergency response agencies in communicating during crises. Not surprisingly, each of these plans requires the government to bestow upon the proposing party free and exclusive spectrum without having to go through the process of competitive bidding like similarly situated carriers. In addition – and not surprisingly again – none of these proposals provides a real answer to public safety's communications problems.

One recent proposal, for example, which has been presented to the FCC by Nextel Communications Inc., purports to address interference between public safety operations and commercial systems by swapping various channels in the 800 MHz band. Although this plan would provide Nextel with more desirable contiguous spectrum – including an entirely gratuitous 10 MHz of MSS spectrum – it does not completely resolve any interference issues because public safety radios

would still need to be redesigned to filter out interfering signals. More significantly, however, Nextel's proposal would leave hundreds of private radio licensees out in the cold – either paying to relocate their operations to bands with poorer propagation characteristics or lack of available equipment, or operating on a secondary basis to public safety systems. As even the public safety community recognizes, private radio operators provide crucial telecommunications capabilities to gas, electric, water, and other utility companies, which work side by side with emergency response teams during disasters. It makes no sense to curtail utilities' ability to communicate, or require them to expend substantial sums to relocate, to remedy isolated instances of interference that can largely be resolved by better design of public safety radios and the cooperation of affected CMRS providers.

Similarly, certain MSS licensees are now attempting to convince the FCC that their satellite systems are capable of enhancing public safety, homeland defense, emergency service, and military systems in rural areas . . . *but* . . . only if the agency allows them to use the satellite spectrum they received for free to compete as terrestrial wireless providers in urban markets. It is not at all clear why these licensees think they will have any more success in sustaining a rural-only satellite business (and thereby promoting public safety in rural areas) than they have had thus far, when virtually all customers and revenue would come from their (entirely separate) urban terrestrial operations. It is clear, however, that these licensees expect to use the ORBIT Act, which precludes the auctioning of *satellite* spectrum, as a means to use their free spectrum to fulfill their *terrestrial* aspirations. In other words, MSS licensees plan to use free spectrum to compete against companies that paid billions of dollars for their licenses. Rather than permit spectrum allocation and auction decisions to be based on dubious, at best, public safety promises, AWS urges Congress to clarify that the ORBIT Act may not be expanded

beyond all semblance of its original meaning.

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September 11 taxed resources of all telecommunications carriers in the United States far beyond what we had ever expected or planned for. Nevertheless, we are proud to say that AWS's established procedures, robust facilities, and dedicated employees allowed it keep its network up and running and to restore impaired service in record time. They also allowed us to devote resources directly to the emergency rescue and recovery efforts underway in New York and Washington, D.C.

Today, based on the lessons learned from 9-11, we have begun to take the steps necessary to ensure that our network – and service to customers and emergency personnel – remain safeguarded in the event of almost any disaster. Many of these activities are internal to AWS or involve coordination and cooperation between the wireless and public safety communities. The intervention of Congress, however, is absolutely critical to our ability to obtain the spectrum and site the redundant tower and transmission facilities that are needed to create truly robust wireless networks. We hope that we can count on you for this help.

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